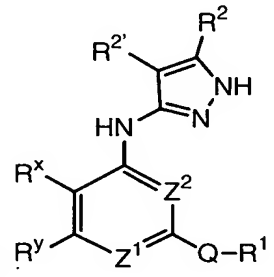
We claim:

1. A compound of formula **IV**:



IV

or a pharmaceutically acceptable derivative or prodrug thereof, wherein:

Z^1 is nitrogen or C-R^8 and Z^2 is nitrogen or CH, wherein one of Z^1 or Z^2 is nitrogen;

Q is selected from -N(R^4)-, -O-, -S-, -C($R^{6'}$)$_2$-, 1,2-cyclopropanediyl, 1,2-cyclobutanediyl, or 1,3-cyclobutanediyl;

R^x and R^y are independently selected from T-R^3 or L-Z-R^3, or R^x and R^y are taken together with their intervening atoms to form a fused, unsaturated or partially unsaturated, 5-7 membered ring having 0-3 ring heteroatoms selected from oxygen, sulfur, or nitrogen, wherein each substitutable ring carbon of said fused ring formed by R^x and R^y is independently substituted by oxo, T-R^3, or L-Z-R^3, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

R^1 is T-(Ring D);

Ring D is a 5-7 membered monocyclic ring or 8-10 membered bicyclic ring selected from aryl, heteroaryl,

heterocyclyl or carbocyclyl, said heteroaryl or heterocyclyl ring having 1-4 ring heteroatoms selected from nitrogen, oxygen or sulfur, wherein each substitutable ring carbon of Ring D is independently substituted by oxo, $T\text{-}R^5$, or $V\text{-}Z\text{-}R^5$, and each substitutable ring nitrogen of Ring D is independently substituted by $-R^4$;

T is a valence bond or a C_{1-4} alkylidene chain, wherein when Q is $-CH(R^6)-$, a methylene unit of said C_{1-4} alkylidene chain is optionally replaced by -O-, -S-, $-N(R^4)-$, -CO-, -CONH-, -NHCO-, $-SO_2-$, $-SO_2NH-$, $-NHSO_2-$, $-CO_2-$, -OC(O)-, -OC(O)NH-, or $-NHCO_2-$;

Z is a C_{1-4} alkylidene chain;

L is $-O-$, $-S-$, $-SO-$, $-SO_2-$, $-N(R^6)SO_2-$, $-SO_2N(R^6)-$, $-N(R^6)-$, $-CO-$, $-CO_2-$, $-N(R^6)CO-$, $-N(R^6)C(O)O-$, $-N(R^6)CON(R^6)-$, $-N(R^6)SO_2N(R^6)-$, $-N(R^6)N(R^6)-$, $-C(O)N(R^6)-$, $-OC(O)N(R^6)-$, $-C(R^6)_2O-$, $-C(R^6)_2S-$, $-C(R^6)_2SO-$, $-C(R^6)_2SO_2-$, $-C(R^6)_2SO_2N(R^6)-$, $-C(R^6)_2N(R^6)-$, $-C(R^6)_2N(R^6)C(O)-$, $-C(R^6)_2N(R^6)C(O)O-$, $-C(R^6)=NN(R^6)-$, $-C(R^6)=N-O-$, $-C(R^6)_2N(R^6)N(R^6)-$, $-C(R^6)_2N(R^6)SO_2N(R^6)-$, or $-C(R^6)_2N(R^6)CON(R^6)-$;

R^2 and $R^{2'}$ are independently selected from $-R$, $-T\text{-}W\text{-}R^6$, or R^2 and $R^{2'}$ are taken together with their intervening atoms to form a fused, 5-8 membered, unsaturated or partially unsaturated, ring having 0-3 ring heteroatoms selected from nitrogen, oxygen, or sulfur, wherein each substitutable ring carbon of said fused ring formed by R^2 and $R^{2'}$ is independently substituted by halo, oxo, -CN, $-NO_2$, $-R^7$, or $-V\text{-}R^6$, and each substitutable ring nitrogen of said ring formed by R^2 and $R^{2'}$ is independently substituted by R^4;

R^3 is selected from $-R$, -halo, $-OR$, $-C(=O)R$, $-CO_2R$, -COCOR, $-COCH_2COR$, $-NO_2$, -CN, $-S(O)R$, $-S(O)_2R$, -SR,

$-N(R^4)_2$, $-CON(R^7)_2$, $-SO_2N(R^7)_2$, $-OC(=O)R$, $-N(R^7)COR$, $-N(R^7)CO_2(C_{1-6}$ aliphatic), $-N(R^4)N(R^4)_2$, $-C=NN(R^4)_2$, $-C=N-OR$, $-N(R^7)CON(R^7)_2$, $-N(R^7)SO_2N(R^7)_2$, $-N(R^4)SO_2R$, or $-OC(=O)N(R^7)_2$;

each R is independently selected from hydrogen or an optionally substituted group selected from C_{1-6} aliphatic, C_{6-10} aryl, a heteroaryl ring having 5-10 ring atoms, or a heterocyclyl ring having 5-10 ring atoms;

each R^4 is independently selected from $-R^7$, $-COR^7$, $-CO_2$(optionally substituted C_{1-6} aliphatic), $-CON(R^7)_2$, or $-SO_2R^7$;

each R^5 is independently selected from -R, halo, -OR, $-C(=O)R$, $-CO_2R$, -COCOR, $-NO_2$, -CN, $-S(O)R$, $-SO_2R$, -SR, $-N(R^4)_2$, $-CON(R^4)_2$, $-SO_2N(R^4)_2$, $-OC(=O)R$, $-N(R^4)COR$, $-N(R^4)CO_2$(optionally substituted C_{1-6} aliphatic), $-N(R^4)N(R^4)_2$, $-C=NN(R^4)_2$, $-C=N-OR$, $-N(R^4)CON(R^4)_2$, $-N(R^4)SO_2N(R^4)_2$, $-N(R^4)SO_2R$, or $-OC(=O)N(R^4)_2$;

V is $-O-$, $-S-$, $-SO-$, $-SO_2-$, $-N(R^6)SO_2-$, $-SO_2N(R^6)-$, $-N(R^6)-$, $-CO-$, $-CO_2-$, $-N(R^6)CO-$, $-N(R^6)C(O)O-$, $-N(R^6)CON(R^6)-$, $-N(R^6)SO_2N(R^6)-$, $-N(R^6)N(R^6)-$, $-C(O)N(R^6)-$, $-OC(O)N(R^6)-$, $-C(R^6)_2O-$, $-C(R^6)_2S-$, $-C(R^6)_2SO-$, $-C(R^6)_2SO_2-$, $-C(R^6)_2SO_2N(R^6)-$, $-C(R^6)_2N(R^6)-$, $-C(R^6)_2N(R^6)C(O)-$, $-C(R^6)_2N(R^6)C(O)O-$, $-C(R^6)=NN(R^6)-$, $-C(R^6)=N-O-$, $-C(R^6)_2N(R^6)N(R^6)-$, $-C(R^6)_2N(R^6)SO_2N(R^6)-$, or $-C(R^6)_2N(R^6)CON(R^6)-$;

W is $-C(R^6)_2O-$, $-C(R^6)_2S-$, $-C(R^6)_2SO-$, $-C(R^6)_2SO_2-$, $-C(R^6)_2SO_2N(R^6)-$, $-C(R^6)_2N(R^6)-$, $-CO-$, $-CO_2-$, $-C(R^6)OC(O)-$, $-C(R^6)OC(O)N(R^6)-$, $-C(R^6)_2N(R^6)CO-$, $-C(R^6)_2N(R^6)C(O)O-$, $-C(R^6)=NN(R^6)-$, $-C(R^6)=N-O-$, $-C(R^6)_2N(R^6)N(R^6)-$, $-C(R^6)_2N(R^6)SO_2N(R^6)-$, $-C(R^6)_2N(R^6)CON(R^6)-$, or $-CON(R^6)-$;

each R^6 is independently selected from hydrogen or an optionally substituted C_{1-4} aliphatic group, or two R^6 groups on the same nitrogen atom are taken together with the nitrogen atom to form a 5-6 membered heterocyclyl or heteroaryl ring;

each $R^{6'}$ is independently selected from hydrogen or a C_{1-4} aliphatic group, or two $R^{6'}$ on the same carbon atom are taken together to form a 3-6 membered carbocyclic ring;

each R^7 is independently selected from hydrogen or an optionally substituted C_{1-6} aliphatic group, or two R^7 on the same nitrogen are taken together with the nitrogen to form a 5-8 membered heterocyclyl or heteroaryl ring; and

R^8 is selected from -R, halo, -OR, $-C(=O)R$, $-CO_2R$, -COCOR, $-NO_2$, -CN, $-S(O)R$, $-SO_2R$, -SR, $-N(R^4)_2$, $-CON(R^4)_2$, $-SO_2N(R^4)_2$, $-OC(=O)R$, $-N(R^4)COR$, $-N(R^4)CO_2$(optionally substituted C_{1-6} aliphatic), $-N(R^4)N(R^4)_2$, $-C=NN(R^4)_2$, -C=N-OR, $-N(R^4)CON(R^4)_2$, $-N(R^4)SO_2N(R^4)_2$, $-N(R^4)SO_2R$, or $-OC(=O)N(R^4)_2$.

2. The compound according to claim 1, wherein Q is selected from -S-, -O-, or -NH-; and said compound has one or more features selected from the group consisting of:

(a) R^x is hydrogen, alkyl- or dialkylamino, acetamido, or a C_{1-4} aliphatic group and R^y is $T-R^3$ or $L-Z-R^3$, wherein T is a valence bond or a methylene and R^3 is -R, $-N(R^4)_2$, or -OR; or R^x and R^y are taken together with their intervening atoms to form a fused, unsaturated or partially unsaturated, 5-6 membered ring having 0-2 heteroatoms selected from oxygen, sulfur, or nitrogen, wherein each substitutable ring carbon

of said fused ring formed by R^x and R^y is independently substituted by oxo, T-R^3, or L-Z-R^3, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond or a methylene unit;

(c) Ring D is a 5-7 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring; and

(d) R^2 is -R or -T-W-R^6 and $R^{2'}$ is hydrogen, or R^2 and $R^{2'}$ are taken together to form an optionally substituted benzo ring.

3. The compound according to claim 2, wherein:

(a) R^x is hydrogen, alkyl- or dialkylamino, acetamido, or a C_{1-4} aliphatic group and R^y is T-R^3 or L-Z-R^3, wherein T is a valence bond or a methylene and R^3 is -R, -$N(R^4)_2$, or -OR; or R^x and R^y are taken together with their intervening atoms to form a fused, unsaturated or partially unsaturated, 5-6 membered ring having 0-2 heteroatoms selected from oxygen, sulfur, or nitrogen, wherein each substitutable ring carbon of said fused ring formed by R^x and R^y is independently substituted by oxo, T-R^3, or L-Z-R^3, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond or a methylene unit;

(c) Ring D is a 5-7 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring; and

(d) R^2 is -R or -T-W-R^6 and $R^{2'}$ is hydrogen, or R^2 and $R^{2'}$ are taken together to form an optionally substituted benzo ring.

4. The compound according to claim 2, wherein said compound has one or more features selected from the group consisting of:

(a) R^Y is T-R^3 or L-Z-R^3 wherein T is a valence bond or a methylene and R^3 is selected from -R, -OR, or -$N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl; or R^x and R^Y are taken together with their intervening atoms to form a benzo, pyrido, cyclopento, cyclohexo, cycloheptо, thieno, piperidino, or imidazo ring, wherein each substitutable ring carbon of said fused ring formed by R^x and R^Y is independently substituted by oxo, T-R^3, or L-Z-R^3, and each substitutable ring nitrogen of said ring formed by R^x and R^Y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond, and Ring D is a 5-6 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring;

(c) R^2 is -R and $R^{2'}$ is hydrogen, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring;and

(d) R^3 is selected from -R, -halo, -OR, or -$N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or -$N(R^4)$-.

5. The compound according to claim 4, wherein:

(a) R^Y is $T\text{-}R^3$ or $L\text{-}Z\text{-}R^3$ wherein T is a valence bond or a methylene and R^3 is selected from -R, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl; or R^x and R^Y are taken together with their intervening atoms to form a benzo, pyrido, cyclopento, cyclohexo, cyclohepto, thieno, piperidino, or imidazo ring, wherein each substitutable ring carbon of said fused ring formed by R^x and R^Y is independently substituted by oxo, $T\text{-}R^3$, or $L\text{-}Z\text{-}R^3$, and each substitutable ring nitrogen of said ring formed by R^x and R^Y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond, and Ring D is a 5-6 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring;

(c) R^2 is -R and $R^{2'}$ is hydrogen, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring;and

(d) R^3 is selected from -R, -halo, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or $-N(R^4)-$.

6. The compound according to claim 4, wherein said compound has one or more features selected from the group consisting of:

(a) R^x is hydrogen methyl, ethyl, propyl, cyclopropyl, isopropyl, methylamino or acetamido and R^Y is selected from 2-pyridyl, 4-pyridyl,

pyrrolidinyl, piperidinyl, morpholinyl, piperazinyl, methyl, ethyl, cyclopropyl, isopropyl, t-butyl, alkoxyalkylamino, alkoxyalkyl, alkyl- or dialkylamino, alkyl- or dialkylaminoalkoxy, acetamido, optionally substituted phenyl, or methoxymethyl; or R^x and R^y are taken together with their intervening atoms to form a benzo, pyrido, piperidino, or cyclohexo ring, wherein said ring is optionally substituted with -halo, -R, -OR, -COR, $-CO_2R$, $-CON(R^4)_2$, -CN, $-O(CH_2)_{2-4}-N(R^4)_2$, $-O(CH_2)_{2-4}-R$, $-NO_2$ $-N(R^4)_2$, $-NR^4COR$, $-NR^4SO_2R$, or $-SO_2N(R^4)_2$, wherein R is hydrogen or an optionally substituted C_{1-6} aliphatic group;

(b) R^1 is T-(Ring D), wherein T is a valence bond and Ring D is a 5-6 membered aryl or heteroaryl ring optionally substituted with one or two groups selected from -halo, -CN, $-NO_2$, $-N(R^4)_2$, optionally substituted C_{1-6} aliphatic, -OR, $-C(O)R$, $-CO_2R$, $-CONH(R^4)$, $-N(R^4)COR$, $-N(R^4)CO_2R$, $-SO_2N(R^4)_2$, $-N(R^4)SO_2R$, $-N(R^6)COCH_2N(R^4)_2$, $-N(R^6)COCH_2CH_2N(R^4)_2$, or $-N(R^6)COCH_2CH_2CH_2N(R^4)_2$;

(c) R^2 is hydrogen or a substituted or unsubstituted group selected from aryl, heteroaryl, or a C_{1-6} aliphatic group, and $R^{2'}$ is hydrogen; and

(d) R^3 is selected from -R, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or -NH-; and

(e) Ring D is substituted by up to three substituents selected from -halo, -CN, $-NO_2$, $-N(R^4)_2$, optionally substituted C_{1-6} aliphatic group, -OR, $-C(O)R$, $-CO_2R$, $-CONH(R^4)$, $-N(R^4)COR$,

$-N(R^4)CO_2R$, $-SO_2N(R^4)_2$, $-N(R^4)SO_2R$, $-N(R^6)COCH_2N(R^4)_2$, $-N(R^6)COCH_2CH_2N(R^4)_2$, or $-N(R^6)COCH_2CH_2CH_2N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring.

Sub A1

7. The compound according to claim 1, wherein Q is $-C(R^{6'})_2-$, 1,2-cyclopropanediyl, 1,2-cyclobutanediyl, or 1,3-cyclobutanediyl; and said compound has one or more features selected from the group consisting of:

(a) R^x is hydrogen, alkyl- or dialkylamino, acetamido, or a C_{1-4} aliphatic group and R^y is $T-R^3$ or $L-Z-R^3$, wherein T is a valence bond or a methylene and R^3 is $-R$, $-N(R^4)_2$, or $-OR$; or R^x and R^y are taken together with their intervening atoms to form a fused, unsaturated or partially unsaturated, 5-6 membered ring having 0-2 heteroatoms selected from oxygen, sulfur, or nitrogen, wherein each substitutable ring carbon of said fused ring formed by R^x and R^y is independently substituted by oxo, $T-R^3$, or $L-Z-R^3$, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond or a methylene unit and wherein said methylene unit is optionally replaced by -O-, -NH-, or -S-;

(c) Ring D is a 5-7 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring; and

(d) R^2 is $-R$ or $-T-W-R^6$ and $R^{2'}$ is hydrogen, or R^2 and $R^{2'}$ are taken together to form an optionally substituted benzo ring.

8. The compound according to claim 7, wherein:

(a) R^x is hydrogen, alkyl- or dialkylamino, acetamido, or a C_{1-4} aliphatic group and R^y is $T-R^3$ or $L-Z-R^3$, wherein T is a valence bond or a methylene and R^3 is $-R$, $-N(R^4)_2$, or $-OR$; or R^x and R^y are taken together with their intervening atoms to form a fused, unsaturated or partially unsaturated, 5-6 membered ring having 0-2 heteroatoms selected from oxygen, sulfur, or nitrogen, wherein each substitutable ring carbon of said fused ring formed by R^x and R^y is independently substituted by oxo, $T-R^3$, or $L-Z-R^3$, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond or a methylene unit and wherein said methylene unit is optionally replaced by -O-, -NH-, or -S-;

(c) Ring D is a 5-7 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring; and

(d) R^2 is $-R$ or $-T-W-R^6$ and $R^{2'}$ is hydrogen, or R^2 and $R^{2'}$ are taken together to form an optionally substituted benzo ring.

9. The compound according to claim 7, wherein Q is $-C(R^{6'})_2-$ or 1,2-cyclopropanediyl, and said compound has one or more features selected from the group consisting of:

(a) R^y is $T-R^3$ or $L-Z-R^3$ wherein T is a valence bond or a methylene and R^3 is selected from $-R$, $-OR$, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl,

phenyl, or 5-6 membered heteroaryl; or R^x and R^y are taken together with their intervening atoms to form a benzo, pyrido, cyclopento, cyclohexo, cyclohepto, thieno, piperidino, or imidazo ring, wherein each substitutable ring carbon of said fused ring formed by R^x and R^y is independently substituted by oxo, T-R^3, or L-Z-R^3, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond, and Ring D is a 5-6 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring;

(c) R^2 is -R and $R^{2'}$ is hydrogen, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring; and

(d) R^3 is selected from -R, -halo, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or $-N(R^4)-$.

10. The compound according to claim 9, wherein:

(a) R^y is T-R^3 or L-Z-R^3 wherein T is a valence bond or a methylene and R^3 is selected from -R, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl; or R^x and R^y are taken together with their intervening atoms to form a benzo, pyrido, cyclopento, cyclohexo, cyclohepto, thieno, piperidino, or imidazo ring, wherein each substitutable ring carbon of said fused ring formed by R^x and R^y is independently

substituted by oxo, T-R^3, or L-Z-R^3, and each substitutable ring nitrogen of said ring formed by R^x and R^y is independently substituted by R^4;

(b) R^1 is T-(Ring D), wherein T is a valence bond, and Ring D is a 5-6 membered monocyclic or an 8-10 membered bicyclic aryl or heteroaryl ring;

(c) R^2 is -R and $R^{2'}$ is hydrogen, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring; and

(d) R^3 is selected from -R, -halo, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, or 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or $-N(R^4)-$.

11. The compound according to claim 9, wherein Q is $-CH_2-$ and said compound has one or more features selected from the group consisting of:

(a) R^x is hydrogen methyl, ethyl, propyl, cyclopropyl, isopropyl, methylamino or acetamido and R^y is selected from 2-pyridyl, 4-pyridyl, pyrrolidinyl, piperidinyl, morpholinyl, piperazinyl, methyl, ethyl, cyclopropyl, isopropyl, t-butyl, alkoxyalkylamino, alkoxyalkyl, alkyl- or dialkylamino, alkyl- or dialkylaminoalkoxy, acetamido, optionally substituted phenyl, or methoxymethyl; or R^x and R^y are taken together with their intervening atoms to form a benzo, pyrido, piperidino, or cyclohexo ring, wherein said ring is optionally substituted with -halo, -R, -OR, -COR, $-CO_2R$, $-CON(R^4)_2$, -CN, $-O(CH_2)_{2-4}-N(R^4)_2$, $-O(CH_2)_{2-4}-R$, $-NO_2$

$-N(R^4)_2$, $-NR^4COR$, $-NR^4SO_2R$, or $-SO_2N(R^4)_2$, wherein R is hydrogen or an optionally substituted C_{1-6} aliphatic group;

(b) R^1 is T-(Ring D), wherein T is a valence bond and Ring D is a 5-6 membered aryl or heteroaryl ring optionally substituted with one or two groups selected from -halo, -CN, $-NO_2$, $-N(R^4)_2$, optionally substituted C_{1-6} aliphatic, -OR, $-C(O)R$, $-CO_2R$, $-CONH(R^4)$, $-N(R^4)COR$, $-N(R^4)CO_2R$, $-SO_2N(R^4)_2$, $-N(R^4)SO_2R$, $-N(R^6)COCH_2N(R^4)_2$, $-N(R^6)COCH_2CH_2N(R^4)_2$, or $-N(R^6)COCH_2CH_2CH_2N(R^4)_2$;

(c) R^2 is hydrogen or a substituted or unsubstituted group selected from aryl, heteroaryl, or a C_{1-6} aliphatic group, and $R^{2'}$ is hydrogen; and

(d) R^3 is selected from -R, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or -NH-; and

(e) Ring D is substituted by up to three substituents selected from -halo, -CN, $-NO_2$, $-N(R^4)_2$, optionally substituted C_{1-6} aliphatic group, -OR, $-C(O)R$, $-CO_2R$, $-CONH(R^4)$, $-N(R^4)COR$, $-N(R^4)CO_2R$, $-SO_2N(R^4)_2$, $-N(R^4)SO_2R$, $-N(R^6)COCH_2N(R^4)_2$, $-N(R^6)COCH_2CH_2N(R^4)_2$, or $-N(R^6)COCH_2CH_2CH_2N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring.

12. The compound according to claim 11, wherein:

(a) R^x is hydrogen methyl, ethyl, propyl, cyclopropyl, isopropyl, methylamino or acetamido and R^Y is selected from 2-pyridyl, 4-pyridyl,

pyrrolidinyl, piperidinyl, morpholinyl, piperazinyl, methyl, ethyl, cyclopropyl, isopropyl, t-butyl, alkoxyalkylamino, alkoxyalkyl, alkyl- or dialkylamino, alkyl- or dialkylaminoalkoxy, acetamido, optionally substituted phenyl, or methoxymethyl; or R^x and R^y are taken together with their intervening atoms to form a benzo, pyrido, piperidino, or cyclohexo ring, wherein said ring is optionally substituted with -halo, -R, -OR, -COR, $-CO_2R$, $-CON(R^4)_2$, -CN, $-O(CH_2)_{2-4}-N(R^4)_2$, $-O(CH_2)_{2-4}-R$, $-NO_2$ $-N(R^4)_2$, $-NR^4COR$, $-NR^4SO_2R$, or $-SO_2N(R^4)_2$, wherein R is hydrogen or an optionally substituted C_{1-6} aliphatic group;

(b) R^1 is T-(Ring D), wherein T is a valence bond and Ring D is a 5-6 membered aryl or heteroaryl ring optionally substituted with one or two groups selected from -halo, -CN, $-NO_2$, $-N(R^4)_2$, optionally substituted C_{1-6} aliphatic, -OR, $-C(O)R$, $-CO_2R$, $-CONH(R^4)$, $-N(R^4)COR$, $-N(R^4)CO_2R$, $-SO_2N(R^4)_2$, $-N(R^4)SO_2R$, $-N(R^6)COCH_2N(R^4)_2$, $-N(R^6)COCH_2CH_2N(R^4)_2$, or $-N(R^6)COCH_2CH_2CH_2N(R^4)_2$;

(c) R^2 is hydrogen or a substituted or unsubstituted group selected from aryl, heteroaryl, or a C_{1-6} aliphatic group, and $R^{2'}$ is hydrogen; and

(d) R^3 is selected from -R, -OR, or $-N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, 5-6 membered heterocyclyl, phenyl, or 5-6 membered heteroaryl, and L is -O-, -S-, or -NH-;

(e) Ring D is substituted by up to three substituents selected from -halo, -CN, $-NO_2$, $-N(R^4)_2$, optionally substituted C_{1-6} aliphatic group, -OR, $-C(O)R$, $-CO_2R$, $-CONH(R^4)$, $-N(R^4)COR$,

$-N(R^4)CO_2R$, $-SO_2N(R^4)_2$, $-N(R^4)SO_2R$, $-N(R^6)COCH_2N(R^4)_2$, $-N(R^6)COCH_2CH_2N(R^4)_2$, or $-N(R^6)COCH_2CH_2CH_2N(R^4)_2$, wherein R is selected from hydrogen, C_{1-6} aliphatic, phenyl, a 5-6 membered heteroaryl ring, or a 5-6 membered heterocyclic ring.

13. A composition comprising a compound according to any one of claims 1-12, and a pharmaceutically acceptable carrier.

14. The composition according to claim 13, further comprising an additional therapeutic agent.

15. A method of inhibiting Aurora-2 or GSK-3 activity in a biological sample comprising the step of contacting said biological sample with a compound according to any one of claims 1-12.

16. A method of inhibiting Aurora-2 activity in a patient comprising the step of administering to said patient a composition according to claim 13.

17. A method of inhibiting Aurora-2 activity in a patient comprising the step of administering to said patient a composition according to claim 14.

18. A method of treating an Aurora-2-mediated disease, which method comprises administering to a patient in need of such a treatment a therapeutically effective amount of a composition according to claim 13.

19. The method according to claim 18, wherein said disease is selected from colon, breast, stomach, or ovarian cancer.

20. The method according to claim 19, wherein said method further comprises administering an additional therapeutic agent.

21. The method according to claim 20, wherein said additional therapeutic agent is a chemotherapeutic agent.

22. A method of inhibiting GSK-3 activity in a patient comprising the step of administering to said patient a composition according to claim 13.

23. A method of inhibiting GSK-3 activity in a patient comprising the step of administering to said patient a composition according to claim 14.

24. A method of method of treating a GSK-3-mediated disease, which method comprises administering to a patient in need of such a treatment a therapeutically effective amount of a composition according to claim 13.

25. The method according to claim 24, wherein said GSK-3-mediated disease is selected from diabetes, Alzheimer's disease, Huntington's Disease, Parkinson's Disease, AIDS-associated dementia, amyotrophic lateral sclerosis (AML), multiple sclerosis (MS), schizophrenia, cardiomycete hypertrophy, reperfusion/ischemia, or baldness.

26. The method according to claim 25, wherein said GSK-3-mediated disease is diabetes.

27. A method of enhancing glycogen synthesis or lowering blood levels of glucose in a patient in need thereof, which method comprises administering to said patient a therapeutically effective amount of a composition according to claim 13.

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28. A method of inhibiting the production of hyperphosphorylated Tau protein in a patient, which method comprises administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 13.

29. A method of inhibiting the phosphorylation of β-catenin, which method comprises administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 13.